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EXAMINER

DANIELS, MATTHEW J

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/689,357

Applicant(s)

DEARDURFF, L. ROBERT

Examiner

Matthew J. Daniels

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Art Unit: 1732

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. **Claims 1-3, 5-10** are rejected under 35 U.S.C. 103(a) as being obvious over Chang (USPN 4150079) in view of Jabarin (USPN 4476170). **As to Claim 1**, Chang teaches a process for preparing a blow molding preform (entire document), comprising:

melting polymer flakes in a plasticating screw extruder (inherent in that some feedstock must be used), to prepare a homogeneous stream of hot polymer melt at the discharge of the extruder (6:51-52);

cooling the polymer melt stream to a temperature at least 20 degrees Centigrade below the extruder discharge temperature, by heat exchange with a heat transfer medium (7:11-15 and 12:37-41 and Fig. 6, Item 44, and Claim 2); and

Art Unit: 1732

forming the cooled polymer melt into a blow molding preform (7:8-10, and Claim 2).

Chang appears to be silent to a liquid heat transfer medium. However, liquid heat transfer medium for heating and cooling is well known in the art. One example is Jabarin, who teaches oil or water for heating or cooling (7:14-22). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Jabarin into that of Chang in order to provide rapid heating or cooling of a mold. Additionally, the Applicant's disclosure acknowledges that this aspect is conventional in the art. See "conventional quench oil heat transfer system" (Page 5, line 10 of the disclosure). **As to Claims 2 and 3**, Chang teaches polyethylene terephthalate (1:55). **As to Claim 5**, Chang teaches about 300 degrees Celsius (6:51-52). **As to Claim 6**, Chang's teaching of "about 300 Degrees C. when injected into a mold cavity" at 6:51-53 and the melt temperature of polyethylene terephthalate being 270 Degrees C renders obvious the claimed subject matter. Any temperature between 270 and 300 Degrees C would have been prima facie obvious.

2. **As to Claim 7**, Chang teaches a process for preparing a blow molding preform (entire document), comprising:

melting polymer flakes (inherent in that some feedstock must be used), comprising polyethylene terephthalate (5:59-60), in a plasticating screw extruder to prepare a homogeneous stream of hot polymer melt at the discharge of the extruder (6:51-52), the temperature of the polymer melt at the discharge of the extruder being about 300 degrees C (6:52);

cooling the polymer melt stream to a temperature at least 20 degrees Centigrade below the extruder discharge temperature, by heat exchange with a heat transfer medium (7:11-15 and 12:37-41 and Fig. 6, Item 44, and Claim 2); and

Art Unit: 1732

forming the cooled polymer melt into a blow molding preform (7:8-10).

Chang appears to be silent to a liquid heat transfer medium. However, liquid heat transfer medium for heating and cooling is well known in the art. One example is Jabarin, who teaches oil or water for heating or cooling (7:14-22). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Jabarin into that of Chang in order to provide rapid heating or cooling of a mold. Additionally, the Applicant's disclosure acknowledges that this aspect is conventional in the art. See "conventional quench oil heat transfer system" (Page 5, line 10 of the disclosure). **As to Claim 8**, Chang teaches polyethylene terephthalate (5:59-60). **As to Claim 9**, Chang's teaching of "about 300 Degrees C. when injected into a mold cavity" at 6:51-53 and the melt temperature of polyethylene terephthalate being 270 Degrees C renders obvious the claimed subject matter. Any temperature between 270 and 300 Degrees C would have been prima facie obvious to one skilled in the art.

3. **As to Claim 10**, Chang teaches a process for preparing a blow molding preform (entire document), comprising:

melting polymer flakes (inherent in that some feedstock must be used), comprising polyethylene terephthalate (5:59-60), in a plasticating screw extruder to prepare a homogeneous stream of hot polymer melt at the discharge of the extruder (6:51-52), the temperature of the polymer melt at the discharge of the extruder being about 300 degrees C (6:52);

cooling the polymer melt stream to a temperature at least 20 degrees Centigrade below the extruder discharge temperature, by heat exchange with a heat transfer medium (7:11-15 and 12:37-41 and Fig. 6, Item 44, and Claim 2; and

forming the cooled polymer melt into a blow molding preform (7:8-10).

Art Unit: 1732

Chang appears to be silent to a liquid heat transfer medium and to 260 to 290 Degrees C.

However, these aspects are common in the art. Firstly, liquid heat transfer medium for heating and cooling is well known in the art. One example is Jabarin, who teaches oil or water for heating or cooling (7:14-22). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Jabarin into that of Chang in order to provide rapid heating or cooling of a mold. Additionally, the Applicant's disclosure acknowledges that this aspect is conventional in the art. See "conventional quench oil heat transfer system" (Page 5, line 10 of the disclosure). Secondly, Chang's teaching of "about 300 Degrees C. when injected into a mold cavity" at 6:51-53 and the melt temperature of polyethylene terephthalate being 270 Degrees C renders obvious the claimed subject matter.

Any temperature between 270 and 300 Degrees C would have been prima facie obvious to one skilled in the art. In considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. See MPEP 2144.01 and *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968). In this case, one skilled in the art would have inferred that any temperature between 270 and 290 C would have been possible in view of a teaching of the melt temperature being 270 C and the explicit teaching of "about 300 Degrees C. when injected into a mold cavity" (emphasis added) in 6:51-53.

4. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang (USPN 4150079) in view of Jabarin (USPN 4476170), and further in view of Takahashi (USPN 6320014). Chang and Jabarin teach the subject matter of Claim 1. See the rejection of Claim 1 above under 35 USC 103(a). **As to Claim 4**, Chang and Jabarin appear to be silent to the

Art Unit: 1732

claimed particle size. The Examiner submits that in this case the size of the particle fed into a melt extruder does not materially affect the claimed process, and that any particle size would have been prima facie obvious to the ordinary artisan. However, Takahashi also teaches pellets having an average diameter of 5 mm comprising polyethylene terephthalate (10:10-15). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Takahashi into that of Chang and Jabarin in order to a) provide a dry feed line of material to an injection molding machine or extruder, b) provide pellets that are prevented from scorching, and c) to provide bottles of polyester having excellent properties such as high strength (All are found in Takahashi, 14: 49-62))

Response to Arguments

5. Applicant's arguments filed 23 December 2005 have been fully considered but they are not persuasive. The arguments appear to be on the following grounds:

- a) Chang and Jabarin fail to disclose Applicant's step 2 of cooling the melt between Chang's plasticizer and mold injection mechanism.
- b) Takahashi does not disclose a process for preparing a blow molded preform, or step 2 of cooling the melt between plasticizer and mold injection mechanism.

6. These arguments are not persuasive for the following reasons:

- a) The Examiner respectfully disagrees with the characterization of the reference to Chang, and submits that Chang's method renders the claimed invention prima facie obvious in view of two possible interpretations of the claim language.

Art Unit: 1732

Firstly, Chang's method melts a stream of polymer, and injects it into a mold at a first pressure and a temperature "greater than its melt temperature" (12:19) forming a preform, and subsequently cooled to a temperature which fulfills the claimed condition of being at least 20 degrees C below the extruder discharge temperature. In this respect, the claimed order of steps of cooling and forming appears to be different than that of Chang, however, it has been held that any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See MPEP 2144.04(IV)(C) and *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results). The remarks and specification do not appear to show the new or unexpected result which could be achieved by the claimed order of cooling and forming over the same steps performed in a different order, such as in the method of Chang.

Secondly, Chang's method teaches introducing a melted polymer into a mold at a temperature "greater than its melt temperature" (12:19) and subsequently cooling to solidification. In this interpretation, upon injection into the mold, the melt in the mold cannot be considered to be a "preform" because it has no "form" when it is melted. In this interpretation, forming is achieved by solidification of the cooled melt from a temperature greater than its melt temperature down to the melt temperature, which encompasses values greater than 20 degrees Celsius. Upon reaching the melt temperature, the cooled polymer melt would be formed into a preform by solidification, and this process also reads on the claimed invention.

b) Takahashi teaches that it is known to use pellets having the claimed size. Applicant's remarks do not assert that any new or unexpected results are provided by the claimed particle size, and

Art Unit: 1732

the Examiner submits that the particle size used would not materially affect the claimed extrusion process.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Friday, 7:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1732

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJD 2/24/06



MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER